

# Students develop gadgets to replace labour

## Farmer-Friendly Prototypes Developed By IIT-Gn

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**Ahmedabad:** As a part of a course "Synthesis and Analysis of Mechanisms" at Indian Institute of Technology, Gandhinagar (IIT-Gn), students of the institute have developed working prototypes of machines for agricultural operations that typically performed manually by farmers.

These prototypes include an electric paddy harvester, pedal-operated threshing machine, fruit harvester, onion harvester, pedal-operated wheat harvester, manual milking machine, pesticide sprayer and a three-in-one plough.

IIT-Gn faculty member and instructor of the course, Professor Vineet Vashista, said, "The aim of the class project is to study farming operations and develop technical solutions to improve output by reducing manual labour. We are looking to develop machi-



IIT-Gn students with their prototypes

nes or mechanisms that can help perform various farming tasks efficiently."

Most of the students' prototypes were developed to be affordable, and decrease the amount of labour for farmers while addressing agronomical issues.

A member of the student team that developed the milking machine, Subodh Kumar, said, "The most common issues faced by farmers are knee joint and spine troubles, from carrying heavy loads and bending for long hours. This is why we developed this

affordable device to milk cows without having to bend." The onion harvester was another device which did not require the farmers to bend.

A pesticide and fertilizer sprayer was also developed, which sprays automatically as the machine is pushed through the field. A lever connected to the wheels of the cart moves the pump of the spray gun.

Karan Gohil, one of the students from the team who developed the sprayer, said, "Carrying tanks of fertilizer or pesticides on the back over



a long period can hurt the spine. Our prototype tries to reduce this carrying of loads on the back through an affordable device." The display also had a device called "PlowBot", which is a three-in-one machine to plough, sow seeds and harrow the soil in one go. Vinod Ramakrishnan, who was part of a team that developed the device, said, "These processes are usually done with tractors. But all farmers cannot afford tractors. However, these manually operated devices could cost as little as Rs 2,000 when mass produced."